Direct & Inverse Variation Worksheet
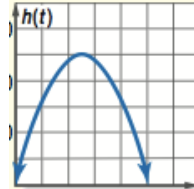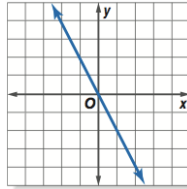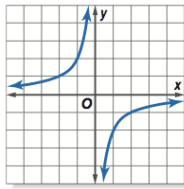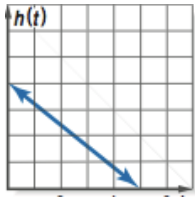
Identify if the following situations depict Direct Variation, Inverse Variation, or neither.

1) _____   2) _____   3) _____   4)_____   5) _____   6) _____

a	b
1	-1.5
2	-3
3	-4.5
4	-6

x	y
1	500
2	250
3	166.7
4	125

7) As the x value increases, the y value increases or decreases at a constant rate. _____.

8) As the x value increases, the y value decreases. _____.

Answer the following Questions.

9) Circle the equation that does **not** show direct variation.

A. $y = \dfrac{2}{3}x + 1$ B. $y = -\dfrac{1}{2}x$ C. $y = 4x$ D. $y = -9x$

10) Circle the equation that shows inverse variation.

A. $y = \dfrac{3}{2}x$ B. $y = \dfrac{x}{7}$ C. $a = \dfrac{20}{b}$ D. $x = 2y$

Identify if the following show direct or inverse variations. Then find the constant of variation.

	Direct or Inverse	Constant of variation (k)
11) y = -3x		
12) 	x	2	4	6	8
y	26	13	8.67	6.5			
13) xy = -15		
14) $\dfrac{y}{x} = 0.5$		

15) If y varies directly as x and y = 18 when x = 15, find y when x = 20.

16) If r varies directly as q and r = 12 when q = -3, find q when r = -64.

17) The length *S* that a spring will stretch varies directly with the weight *F* that is attached to the spring. If a spring stretches 20 inches with 25 pounds attached, how far will it stretch with 15 pounds attached?

18) If x and y vary inversely and x=1 when y=11, find x when y=5.5

19) Suppose *b* varies inversely as *a*, and *a* = 7 when *b* = 6. Find *a* when *b* = 21.

20) The grade you earn in math varies inversely with the number of minutes per night you watch television. If you watch 90 minutes per night, you get a 60 in math.

   a. What is the constant of variation?

   b. How much television can you watch if you want to make a 70?

   c. You cut back on your television to only 60 minutes a night, what grade will you make in math?

   d. What is the maximum amount of television you can watch and still make a 100?